

Impact of ion exchange resins comparing to oenological additives on wine quality

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Tartaric acid is the most important organic acid in the wine. It is easily ionized, leading to the formation of precipitates like potassium hydrogen tartrate (KHT) and calcium tartrate (CaT). Although, not harmful to health of the consumer, these precipitates, leads to a decrease in the commercial acceptance and consequently to the decrease of the commercial value of the wine. To prevent the occurrence of these precipitations several treatments can be used. Among them, ion exchange resins is an accepted stabilization process by the OIV according to the Resolution 43/2000, as well as the treatment with oenological products such as metatartaric acid, since 1970, and carboxymetilcelulose (CMC's), since 2009. Therefore, the aim of this work was to compare the impact of ion exchange resins with oenological additives, such as CMC's with different structural features and metatartaric acid, on wine quality. For this propose, Douro Valley wines treated with ion exchange resins, CMC and metatartaric acid were evaluated concerning there physicochemical (phenolic compounds, chromatic characteristics, mineral composition and phenolic profile by HPLC-DAD) and sensory characteristics. Results shown that, white wine treated with ion exchange resins, presented lower concentration of total phenolic compounds compared to treated wines with oenological additives. Also, phenolic profile obtained by chromatographic analysis showed differences among treatments. Regarding white wine sensory characteristics, ion exchange resins seem to improve some sensory attributes, namely colour intensity, in these treated wines. Similarly, red wines aroma and taste were also improved, when treated with ion exchange resins (Figure 1). These data suggest that wines treated with ion exchange resins, maintained or improved wine quality.

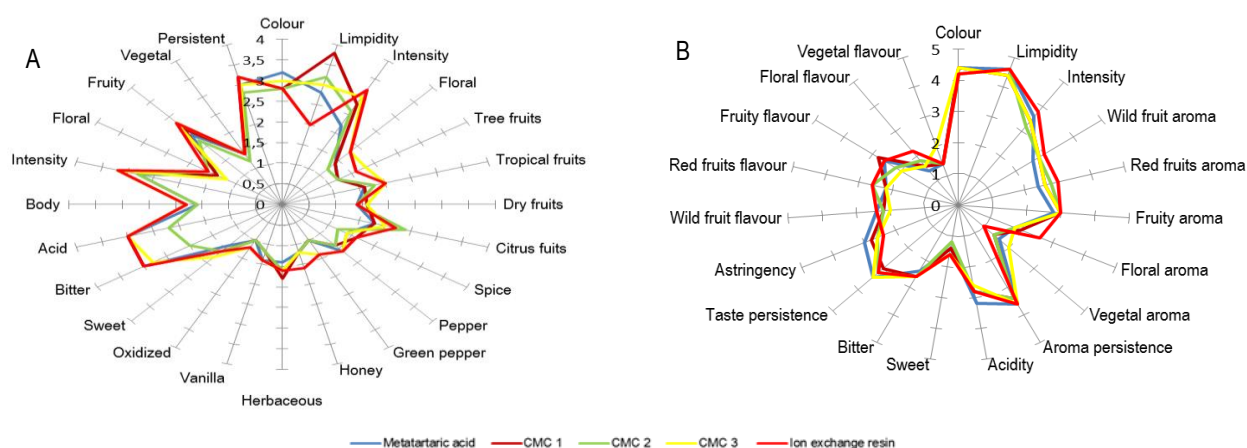


Figure 1- Sensory profile of treated wines: (A) White wine; (B) Red wine.

Acknowledgements

This work was partially funded by the Chemical Research Centre (CQ-UTAD). Additional thanks to AEB Bioquímica Portuguesa and to the Project I&D INNOVINE&WINE – Vineyard and Wine Innovation Platform, NORTE-01-0145-FEDER-000038, co-financed by the Fundo Europeu de Desenvolvimento Regional (FEDER) through the NORTE 2020 (Programa Operacional Regional do Norte 2014/2020).